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PATENT ABSTRACTS OF JAPAN

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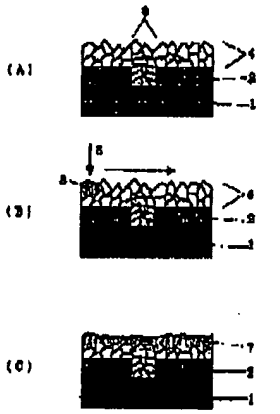
(54) METHOD OF REDUCTION IN RESISTANCE OF METAL THIN FILM

(57)Abstract:
PURPOSE: To reduce the electric resistance of a metal thin film as well as to make the surface of the thin film flatten by a method wherein the metal thin film, such as a tungsten thin film, formed on a silicon substrate is annealed by emitting an excimer laser.
CONSTITUTION: An SiO2 layer 2 is formed on a silicon substrate 1 and a contact hole 3 is provided. Moreover, a tungsten layer 4 is formed by a plasma CVD method. Then, a laser beam 5 is cast on the surface of the layer 4 in an atmosphere of argon and is scanned in the direction shown by an arrow consisting of broken lines. This treatment is applied to the whole surface of the layer 4. An irradiated surface layer part 6 is melted, then, is recrystallized and a surface layer part 7 is single-crystallized or large-grain-sized. An XeCl excimer laser (308nm) is cast on the film 4 of a thickness of 3000 angstrom at 1000mJ/cm2. As a result, the electric resistance of the tungsten thin film is approximated to a bulk resistance value and the surface of the thin film becomes flat.



LEGAL STATUS

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